

chain nodes :

8 9 10 13

ring nodes :

1 2 3 4 5 6 7

chain bonds :

2-13 6-8 8-9 9-10

ring bonds :

1-2 1-4 2-3 3-4 4-5 4-7 5-6 6-7

exact/norm bonds :

1-2 1-4 2-3 2-13 3-4 4-5 4-7 5-6 6-7

exact bonds :

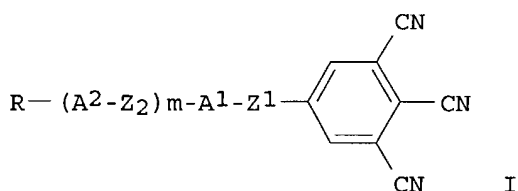
6-8 8-9 9-10

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:CLASS 9:CLASS 10:CLASS
13:Atom

L6 ANSWER 1 OF 8 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 2001:516268 CAPLUS
 DN 135:84384
 ED Entered STN: 18 Jul 2001
 TI **Liquid crystalline 3,4,5-tricyanophenyl derivatives as potential dopants in liq. crystal media**
 IN Goulding, Mark John; Hirschmann, Harald; Kirsch, Peer; Krause, Joachim
 PA Merck Patent G.m.b.H., Germany
 SO Brit. UK Pat. Appl., 31 pp.
 CODEN: BAXXDU
 DT Patent
 LA English
 IC ICM C07C255-55
 ICS C07C255-51; C07C255-54; C09K019-14; C09K019-20; C09K019-30
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 75
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|------------------|------|----------|-----------------|----------|
| PI | GB 2350361 | A1 | 20001129 | GB 2000-12376 | 20000522 |
| | GB 2350361 | B2 | 20031203 | | |
| PRAI | EP 1999-110066 | A | 19990522 | | |
| OS | MARPAT 135:84384 | | | | |
| GI | | | | | |



AB Disclosed are 3,4,5-tricyanophenyl derivs. of the formula I (R = F, Cl, CN, NCS, C1-25-alkyl; A1, A2 = 1,4-phenylene, trans-1,4-cyclohexylene, 1,4-cyclohexenylene, 1,4-bicyclo-(2,2,2)-octylene, piperidine-1,4-diyl, naphthalene-2,6-diyl, decahydro-naphthalene-2,6-diyl, 1,2,3,4-tetrahydro-naphthalene-2,6-diyl, cyclobutane-1,3-diyl, **spiro**[3.3]**heptane**-2,6-diyl or dispiro[3.1.3.1]decane-2,8-diyl; Z1, Z2 = -CH2O-, -OCH2-, -COO-, -OCO-, -CH2CH2-, -(CH2)4-, -CF2CF2-, -CH=CH-, -CF=CF-, -C-C- or a single bond; m = 0-2). These compds. exhibit very high dielec. anisotropy ($\Delta\epsilon$) and therefore can be used in small amts. as dopants to increase the value of ($\Delta\epsilon$) in **liq. crystal** media. These compds. may be used as components in **liq. crystal** media and displays.
 ST tricyanophenyl deriv dopant **liq crystal** media
 IT **Liquid crystals**
 (liq. **cryst.** 3,4,5-tricyanophenyl derivs. with high dielec. anisotropy as dopants in **liq. crystal** media)
 IT **Liquid crystal** displays
 (liq. **cryst.** 3,4,5-tricyanophenyl derivs. with high dielec. anisotropy as dopants in **liq. crystal** media in relation to)
 IT 146105-19-3, ZLI 4792
 RL: TEM (Technical or engineered material use); USES (Uses)
 (liq. **cryst.** 3,4,5-tricyanophenyl derivs. with high dielec. anisotropy as dopants in **liq. crystal**)
 IT 346698-11-1 346698-13-3
 RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)